REQUEST FOR PROPOSAL
FOR
Bollinger Canyon & Crow Canyon Corridor Traffic Signal System Upgrade Project (CIP 5457)

Engineering Services Department
June 12, 2009

Mandatory Notice of Intent:	**4:00 PM (PST), June 26, 2009** City of San Ramon Engineering Services Department 3180 Crow Canyon Place, Suite 140 San Ramon, Ca 94583
Deadline for Submitting Questions:	**4:00 PM (PST), June 26, 2009** City of San Ramon Engineering Services Department 3180 Crow Canyon Place, Suite 140 San Ramon, Ca 94583
Proposal Due Date:	**4:00 PM (PST), July 7, 2009** City of San Ramon Engineering Services Department 3180 Crow Canyon Place, Suite 140 San Ramon, CA 94583
Team Presentations/Committee Interviews:	**July 14-15, 2009** City of San Ramon Engineering Services Department 3180 Crow Canyon Place, Suite 140 San Ramon, CA 94583
Contact Person: Address:	Mike Talley, P.E., Senior Traffic Engineer City of San Ramon Engineering Services Department 3180 Crow Canyon Place, Suite 140 San Ramon, CA 94583
Telephone: Fax: Email:	(925) 973-2654 (925) 866-6173 mtalley@sanramon.ca.gov

TABLE OF CONTENTS

1 Introduction

The City of San Ramon is soliciting proposals for installation of an advanced traffic management system (ATMS) that provides adaptive traffic signal control for up to sixteen intersections on two heavily-traveled regional arterial corridors in San Ramon. The City seeks to enter into an agreement with a system vendor/contractor team for furnishing and installing a complete adaptive traffic management system that is most likely to deliver the greatest improvements and/or benefits in the areas described below:

- Traffic signal system performance:
  - Reduction in delays
  - Reduction in travel time
  - Reduction in number of stops
  - Reduction in emissions

- Interagency traffic signal coordination (Caltrans and the City of San Ramon)

- Ease of use
  - Excellent documentation
  - User-friendly operation
  - Ease of troubleshooting
  - Ease of maintenance

- Low cost/benefit ratio

The ideal prospective system vendor/contractor team would possess the following:

- A proven track record of adaptive traffic signal system deployments that have resulted in significant improvements in traffic signal system performance
- A proven track record of adaptive traffic signal system installations that have resulted in years of low-maintenance, trouble-free operation
- Ability to synchronize City traffic signal network with Caltrans freeway ramp signals
- Strong commitment to system support
- Strong commitment to customer service
- Demonstrated financial and organizational stability
- Commitment to industry compatibility standards and practices
- Demonstrated record of low operating and maintenance costs

The upgrade from current operations may include new controllers, controller firmware, vehicle detection equipment, and upgrades in existing communications infrastructure. The advanced traffic management system software interface should utilize the Windows XP operating system, provide access to traffic count information, intersection maintenance information, and signal timing tools internal to the adaptive program.

The adaptive system sought herein shall continuously update cycle lengths, offsets and splits using various data inputs including, but not limited to, detector inputs, phase outputs and

historical count information. In general, the adaptive system and controller options should include (but not be limited to) the following:

- Traffic adaptive operation options
- Open architecture
- Compliance with NEMA and NTCIP standards to the extent possible
- Remote diagnostics related to time of day schedules and traffic adaptive adjustment procedures
- On-line help
- Memory-stick transfer of data (USB support)
- Pre-emption and Priority

The final system shall be evaluated and selected according to the requirements of this RFP. Selection will be based on proposal, interview and a system demonstration.

1.1. Definitions

For the purpose of this Request for Proposal ("RFP"), references to entities shall be as follows:

- "City" in all instances will be the customer, City of San Ramon.
- "Adaptive traffic control" shall refer to a system that efficiently reacts in real-time to changes in traffic flow to provide an integrated management system for adjoining signalized intersections in which no pre-calculated signal timing plans are required.
- "ATMS" is an Advanced Traffic Management System that includes any combination of software, firmware, and hardware capable of providing adaptive, synchronized control of a network of traffic signals.
- References to "Vendor" will be the primary manufacturer or supplier of the products being proposed for the ATMS deployment project.
- References to "Contractor" will be the primary installer of the products being proposed for the project.
- References to "Proposer" in all instances will be the Proposer submitting a response to this RFP on behalf of the team of ATMS system vendor and contractor.
- References to "Vendor/Contractor" shall be the team of ATMS system vendor and installer who will furnish and install all ATMS system components.

1.2. Clarification and Interpretation of RFP

1.2.1. The words "must" or "will" or "shall" in this Request for Proposal indicate mandatory requirements. Taking exception to any mandatory requirement may be grounds for rejection of the proposal.

1.2.2. The City desires to avoid any misunderstanding where it is assumed that a feature is included in the proposal and turns out to be an optional, extra cost feature. As such, any question answered with an indication of compliance will be considered included at no additional cost. Any service that is referred to in the body of this response (does not pertain to attachments and brochures) will be considered included in the basic offer.

1.3. Purpose

The purpose of this RFP is to provide minimum requirements, solicit proposals and gain adequate information from which the City may evaluate the Proposer's products and services as

they compare to other equipment providers and as they pertain to the needs of the City's organization as defined in this document.

1.4. Contract Duration and Project Schedule
The contract is expected to be executed within 20 working days following approval by the City Council. The project will commence within 15 working days following contract execution and shall be completed within 70 working days.

1.5. Projected Installation Date
The selected vendor/contractor will develop a project plan and timeline with the City upon award. The selected vendor/contractor will make best efforts to meet installation deadline. Installation shall be completed within 70 working days from the date of the Notice to Proceed.

1.6. Communications Regarding the RFP
After release of this RFP, all Proposer communications concerning this procurement must be directed to Mike Talley, Project Manager**,** City of San Ramon Engineering Services Department, 3180 Crow Canyon Pl., Ste. 140, San Ramon, CA 94583. Telephone number is: (925) 973-2654. Fax number is (925) 866-6173, and email address is mtalley@sanramon.ca.gov. Unauthorized contact regarding the RFP with other employees of the procuring City may result in disqualification.

1.6.1. All communications must be submitted in writing to the Project Manager. Any oral communications shall not be binding to the City or considered official. The Project Manager must receive these written requests by the deadline specified in the estimated Project Calendar.

1.6.2. All written communication regarding this RFP can be sent by facsimile transmission or email.

1.6.3 The Project Manager shall respond in writing to all written communications. This response shall constitute an amendment to the RFP. Only written responses to written communications shall be considered binding and official by the City. At its sole discretion, the City reserves the right to determine appropriate and adequate responses to written questions, comments and requests for clarification.

1.6.4. Any data or factual information provided by the City shall be deemed as informational purposes only.

2 Proposal Process

Proposals will consist of qualifications, specification and cost components. One original and three copies of the complete proposal are required, along with an electronic copy. The cost component shall be submitted in a separate sealed envelope. The original proposal must be clearly marked and contain original signatures. Failure to clearly mark the original and provide original signatures may result in a proposal being found non-responsive and given no consideration. Faxed, e-mailed, or late proposals will not be accepted.

Proposers shall submit a Notice of Intent by the deadline specified in this RFP. The Notice of Intent shall include a written notice of intent to submit a proposal for this project. The notice may be transmitted by email or fax, as well as standard mail.

Proposers are solely responsible for delivery to the City prior to the date and time set forth. Any proposals received subsequent to that time, regardless of reason, will not be considered.

Information contained in the proposals must be complete and in accordance with the terms and conditions of this RFP. The information requested herein and the format for which it is requested is essential to permit prompt evaluation of proposals on a fair and uniform basis. The City reserves the right to declare a proposal non-responsive and reject any proposal in which the material presented is not furnished or where indirect or incomplete answers are provided.

The City also reserves the right to reject any or all of the proposals received, to negotiate with the most qualified proposer based solely on proposal, or to cancel this RFP in part or wholly without explanation to proposers. The City may elect to interview only a select number of proposers at its own discretion.

2.1 Project Timeline

The vendor/contractor selection process will follow the timeline shown below. Estimated key milestone dates for the completion of the project are also included:

Request for Proposals Issued	June 12, 2009
Deadline for submitting Mandatory Notice of Intent	June 26, 2009
Deadline for submitting Questions	June 26, 2009
Proposal Submission Deadline	July 7, 2009, 4:00 p.m. PST
Presentations/Interviews	July 14 & 15, 2009
Notification of Results of Selection Process	July 17, 2009

Planned Award of Contract	July 28, 2009
Planned Notice to Proceed	September 9, 2009
System Installation Completed	December 15, 2009

Proposers should note that this project is funded entirely by grant funding. The majority of funding is through California Proposition 1B as part of the Traffic Light Synchronization Program (TLSP). Milestones are subject to delays depending on availability of bond funds.

3 RULES GOVERNING PROPOSALS

3.1. Contact Information

Technical inquiries and proposals shall be submitted to the Project Manager as follows:

Mike Talley, Project Manager
City of San Ramon
Engineering Department
3180 Crow Canyon Pl., Ste. 140
San Ramon, CA 94583
Tel: (925) 973-2654
Fax: (925) 866-6173
E-mail: mtalley@sanramon.ca.gov

3.2. Proposal Deadline

Proposals shall be submitted no later than the Proposal Deadline time and date detailed in the RFP. Proposers shall respond to the written RFP and any exhibits, attachments, or amendments. A Proposer's failure to submit a proposal before the deadline as required shall cause that proposal to be disqualified. Proposers assume the risk of the method of dispatch chosen. The City assumes no responsibility for delays caused by any delivery service. Postmarking by the due date shall not substitute for actual proposal receipt by the City. Late proposals shall not be accepted nor shall additional time be granted to any Proposer. Proposals may not be delivered orally, by facsimile transmission, or by other telecommunication or electronic means.

3.3. Nondiscrimination

No person shall be excluded from participation in, be denied benefits of, be discriminated against in the admission or access to, or be discriminated against in treatment or employment in the City's contracted programs or activities on the grounds of disability, age, race, color, religion, sex, national origin, or any other classification protected by federal or California State Constitutional or statutory law; nor shall they be excluded from participation in, be denied benefits of, or be otherwise subjected to discrimination in the performance of contracts with the City or in the employment practices of the City's Proposers. Accordingly, all Proposers entering into contracts with the City shall, upon request, be required to show proof of such nondiscrimination and to post in conspicuous places, available to all employees and applicants, notices of nondiscrimination.

3.4. Electronic Form

An electronic copy of this RFP may be obtained from the City's Project Manager.

3.5. General Proposing Parameters

3.5.1. Contingencies

Before submitting their bid, Proposers should make a careful examination of the scope of work and of the difficulties involved in its proper execution. Proposers should include in their proposal all costs they deem proper and sufficient to cover all contingencies essential to the installation of the proposed system, notwithstanding that every item or contingency is not specifically mentioned herein.

3.5.2. Insurance
A sample agreement the successful proposer will be expected to enter into with the City of San Ramon is also found in Appendix A-1. (This sample agreement is currently under review by the City Attorney's Office and is subject to change.) The successful Proposer shall comply with all of the City's Legislative and Administrative Policies which contains the City's insurance requirements. The policy requires the Vendor/Contractor to hold City harmless against all claims arising out of the system installation. A copy of the policy document is provided in Appendix A-2.

3.5.3. Licensure
Before a contract pursuant to this RFP is signed, the Proposer must hold all necessary and applicable business and professional licenses. The successful proposer shall also be required to obtain a City of San Ramon business license once the contract is awarded. Additional requirements are provided in Appendix A.

3.5.4. Conflict of Interest and Proposal Restrictions
Please refer to Appendix A-2 for Conflict of Interest requirements of successful Proposer. The requirements include the provisions of Form 700 of the State of California Fair Political Practices Act. (Please refer to http://www.fppc.ca.gov/forms/700-06-07/Form700-06-07.pdf for a copy of the form.)

3.5.5. RFP Amendment and Cancellation
The City reserves the unilateral right to amend this RFP in writing at any time. The City also reserves the right to cancel or reissue the RFP at its sole discretion. Proposers shall respond to the final written RFP and any exhibits, attachments and amendments.

3.5.6. Right of Rejection
Any proposal received which does not meet the requirements of this RFP may be considered to be nonresponsive and the proposal may be rejected. Proposers must comply with all of the terms of this RFP and all applicable State and County laws and regulations. The City may reject any proposal that does not comply with all of the terms, conditions and performance requirements of this RFP.

The City reserves the right, at its sole discretion, to waive variances in technical proposals provided such action is in the best interest of the City. Where the City waives minor variances in proposals, such waiver does not modify the RFP requirements or excuse the Proposer from full compliance with the RFP. Notwithstanding any minor variance, the City may hold any Proposer to strict compliance with the RFP.

3.5.7. Severability
If any provision of this RFP is declared by a court to be illegal or in conflict with any law, the validity of the remaining terms and provisions shall not be affected; and, the rights and obligations of the City and Proposers shall be construed and enforced as if the RFP did not contain the particular provision held to be invalid.

3.5.8. Permits and Codes
The selected Proposer will comply with all laws, codes, rules and regulations of the State, County and City applicable to the work to be performed at the City's location. The proposer, who shall pay all lawful charges, shall obtain all permits lawfully required.

3.5.9. Shipments
All shipments and deliveries should be made to a City-designated specific site for product staging and asset tagging.

3.5.10. Warranty and Maintenance
See Section 5.2.

3.5.11. Pricing
The price quoted will include a turn-key solution including hardware, software, installation, training, 15-year maintenance support, tax, acceptance testing of the System, and all appurtenant equipment for a fully operational system. Proposer must itemize all charges for individually identifiable components of the proposed system, including warranty. Professional services, freight, taxes and training charges may be listed out separately as individual line items. The Cost Proposal shall specifically record the exact cost amounts proposed in the appropriate spaces. Said proposed cost shall incorporate all cost for the proposed scope of services for the total contract period. The Cost Proposal format must be signed and dated by the Proposer's authorized agent.

3.5.12. Itemized List of Equipment
Proposers must include an itemized list of all hardware, software and professional services required for their proposed solution.

3.5.13. Turn-Key Installation
The price of the proposed solution must include all materials and professional services necessary to accomplish a turn-key installation.

3.5.14. Late Proposals
Proposals or unsolicited amendments to proposals arriving after the proposal due date will be rejected as not meeting the mandatory requirements of this RFP.

3.5.15. Proposal Withdrawal
To withdraw a proposal, the Proposer must submit a written request signed by an authorized representative to the Project Manager. After withdrawing a previously submitted proposal, the Proposers may submit another proposal at any time up to the deadline for submitting proposals.

3.5.16. Proposal Amendment
The City shall not accept any amendments, revisions, or alterations to proposals after the deadline for proposal submittal unless such is formally requested, in writing, by the City.

3.5.17. Proposal Errors
Proposers are liable for all errors and omissions contained in their proposals. Proposers shall not be allowed to alter proposal documents after the deadline for submitting a proposal.

3.5.18. Incorrect Proposal Information
If the City determines that a Proposer has provided incorrect information which the Proposer knew or should have known was materially incorrect, that proposal shall be determined non-responsive and the proposal shall be rejected.

3.5.19. Review Rights
Proposals submitted may be reviewed and evaluated by any person(s) considered necessary to the decision-making process at the discretion of the City.

3.5.20. Proposal Preparation Costs
The City shall not pay any costs associated with the preparation, submission, or presentation of any Proposal.

3.5.21. Proposal of Alternate Services
Proposals of alternate solutions, excepting the enhancements and additional value components called for (i.e. proposals that offer something different from that requested by the RFP), shall be considered nonresponsive and shall be rejected.

3.5.22. Proposal of Additional Services
If a Proposer proposes an offer of services in addition to those required by and described in this RFP, these additional services may be added to the contract before contract signing at the sole discretion of the City.

3.5.23. Independent Price Determination
The Proposer is prohibited from submitting more than one proposal. However, alternative solutions within Proposer's single response will be accepted. Submittal of more than one response shall result in the disqualification of the Proposer.

3.5.24. Public Release of Information
News releases, articles, brochures, advertisements, prepared speeches and other information releases concerning this RFP, or any subsequent contract or activity related thereto, may not be made without the prior written approval of the City.

3.5.25. Liability and Reserved Rights
The City reserves the right not to award a contract to any of the Proposers solicited in this RFP. The City also reserves the right to make partial awards. This RFP may be withdrawn at any time without liability or responsibility for any damages or expenses incurred by Proposers.

3.5.26. Prevailing Wages

This project requires the payment of prevailing wages as per the state of California.

3.5.27. Injury and Illness Prevention Program

To the fullest extent legally required and applicable, Vendor/Contractor shall have an Injury and Illness Prevention Program (IIPP) that conforms to all applicable federal, state and local laws, and shall provide a copy of its current version to the City upon request.

4 INSTRUCTIONS TO PROPOSERS

This section outlines specific instructions for proposal submission. Proposers not adhering to these instructions shall be disqualified without further consideration.

4.1. RFP Questions

Specific questions concerning the RFP must be submitted in writing to the Project Manager. Please refer to the Project Timeline and note the deadline for submitting questions. Response to any question that is given orally is to be considered tentative and non-binding to the City. The official response to questions shall be published in writing to all Proposers. This shall ensure accurate, consistent responses to all Proposers. Only the written responses from the City shall be considered official.

4.2 Response Format

The intent of the RFP is to allow Proposers the opportunity to fully explain their recommended solution. Proposers are responsible for providing sufficient information to enable the City to evaluate their ability to successfully deliver a complete ATMS of this RFP. Proposer must describe in detail how he or she will meet the requirements of this RFP, and may provide additional related information with his or her proposal. The proposal should be presented in a format that corresponds to, and references, the sections outlined in the Specifications or Scope of Work, and should be presented in the same order. Responses to each section and subsection should be labeled to indicate which item is being addressed.

Proposals should be straightforward and concise and provide "layman" explanations of technical terms that are used. Emphasis should be concentrated on conforming to the RFP instructions, responding to the RFP requirements, and on providing a complete and clear description of the offer. If a complete response cannot be provided without referencing supporting documentation, you must provide such documentation with the proposal indicating where the supplemental information can be found.

Proposals must include all proposed terms and conditions, including, without limitation, written warranties, maintenance/service agreements, license agreements, lease purchase agreements, and the Proposer's standard contract language. The omission of these documents renders a proposal non-responsive. Proposals which appear unrealistic in the terms of technical commitments, lack technical competence, or are indicative of failure to comprehend the complexity and risk of this contract may be rejected.

The City is not liable for any costs incurred by Proposers before entering into a formal contract. Costs of developing the proposals or any other such expenses incurred by the Proposer in responding to the RFP, are entirely the responsibility of the Proposer, and shall not be reimbursed in any manner by the City.

Where applicable, Proposers will respond in line to the original RFP sections and will, for each individual statement of compliance, reply with one of the following:

• Compliant: Proposer's product or service completely satisfies the stated condition or need. Where appropriate, additional details explaining how the proposal complies should be included.
• Partially Compliant: Proposer's product or service only partially satisfies the stated condition or need.
• Non-Compliant: Proposer's product does not satisfy any part of the stated condition or Proposer does not or cannot provide the services needed.
• Noted: Where a statement / requirement provides only general information.

4.2.1. Proposals should provide a straightforward, concise description of the Proposer's capabilities to satisfy the requirements of this RFP. Emphasis is on completeness and clarity of content.

4.3. Statement of Compliance

By submission of a response to this RFP, Proposer acknowledges full compliance with required specifications and all terms and conditions as detailed in the RFP.

4.4. Proposal Submittal

4.4.1. One original and four printed copies of the Proposal shall be submitted to the City in a sealed package and be clearly marked:

"Proposal for City of San Ramon Traffic Signal Management System Upgrade Project: Bollinger Canyon Road and Crow Canyon Road (CIP 5457)"

4.4.2. All responses must be received at the **City Clerk's Office at City Hall, 2222 Camino Ramon, San Ramon, CA 94583** by **4 PM** (according to official clock in City Clerk's office) on July 7, 2009.

4.4.3. The complete proposal must include the proposal document with a response to the RFP and all other materials requested. Proposers may include any additional materials they feel could assist in the evaluation of the proposed system. However, each question must be responded to completely.

4.4.4. All equipment components, hardware, software, training, installation services and all other materials must be furnished for the complete installation of the new ATMS specified. Any additional material or equipment necessary for the installation and operation of the new ATMS not specified or described in this RFP will be deemed to be required as a part of these specifications.

4.5. Key Evaluation Criteria

The evaluation criteria for selecting the Contractor are based on the combination of approach, qualifications, system functionality, and costs as described in the RFP, that yield the overall **BEST VALUE** to the City of San Ramon. The ATMS Requirement List will be used to assess compliance with the System Specifications. The Contract Price Schedule will be evaluated and

used for assessing proposed costs. The oral interview and proposed additional features will also be a factor in the selection process. All responses will be evaluated against the following criteria:

4.5.1. Responsiveness: A complete and concise response to the RFP that complies with City's requirements. (10%)

4.5.2. Capabilities and Resources: Proposers will be evaluated based on discussion of the methods proposed for providing the required services. Descriptions of services should explain how the firm will handle the design and implementation phase of the project. A discussion of the capability of the system to provide interagency synchronization should be included, as well as the design approach, implementation, deployment, cutover, assurance on operability, and involvement in the design and implementation phases of the work. (20%)

4.5.3. Cost Effectiveness: Proposals will be evaluated based on lowest cost with the greatest combination of potential benefits. (20%)

4.5.4. Experience: Evaluation of the Proposer's experience in the design, implementation, integration and support of ATMS and associated technologies. The City desires to partner with a Vendor/Contractor team who is recognized as a leader in the industry with substantial resources and a proven track record of similar successful projects. (20%)

4.5.5. References: Record of similar solutions provided for other City's and/or other agencies by the Proposer, Project Team and Manufacturer. (10%)

4.5.6. Service Capabilities: Remote serviceability and technical support of the entire ATMS. Ability to provide timely support on an ongoing basis. Ability to respond promptly to problems/requests. Ability to support and maintain the system over the 15-year life cycle. (20%)

4.5.7. Oral Interview: Demonstration of the proposed ATMS that will operate with the functions identified in the System Specifications. (20% - bonus points)

The demonstration shall be evaluated as follows (points are subject to change):

1. Description/Comprehension/Expected performance using the proposed algorithm. *1/3 Total Interview Bonus Points*
2. Demonstration of functional compliance. *1/3 of Total Interview Bonus Points*
3. Response to questions. *1/3 of Total Interview Bonus Points*
   Additional information on the interview/demonstration will be provided at a later date, if necessary.

4.6. Proposal Evaluation Process

All proposals shall be reviewed by the Project Manager to determine compliance with basic proposal requirements as specified in this RFP. If the Project Manager determines that a proposal may be missing one or more such requirements, the Proposal Evaluation Team shall review the proposal to determine:

• if it meets requirements for further evaluation;
• if the City shall request clarification(s) or correction(s); or
• if the City shall determine the proposal non-responsive and reject it.

4.6.1. The Project Manager shall manage the proposal evaluation process and maintain proposal evaluation records. A proposal evaluation team made up of City employees, and others shall be responsible for evaluating proposals.

4.6.2. Oral presentations, written questions for further clarifications and/or site visits to similar installations may be required.

4.6.3. The City reserves the right, at its sole discretion, to request clarifications of proposals or to conduct discussions for the purpose of clarification with any or all proposers. The purpose of any such discussions shall be to ensure full understanding of the proposal. Discussions shall be limited to specific sections of the proposal identified by the City and, if held, shall be after initial evaluation of proposals. If clarifications are made as a result of such discussion, the proposer shall put such clarifications in writing.

4.6.4 Final Scoring

Proposers will be ranked based on the total points for the written proposal and interview/demonstration. The highest scoring team will be recommended to enter into negotiations with the City. If negotiations with the highest ranked firm fail to produce a signed contract, the City will enter into discussions with the next highest scoring team.

4.7. Assignment and Subcontracting

4.7.1. The Proposer may not subcontract, transfer, or assign any portion of the contract without prior, written approval from the City. Each subcontractor must be approved in writing by the City. The substitution of one subcontractor for another may be made only at the discretion of the City and with prior written approval from the City.

4.7.2. If awarded a contract under this RFP, the Proposer, notwithstanding the use of approved subcontractors, shall be the Prime Vendor/Contractor and shall be responsible for all work performed.

4.7.3. As part of response to this RFP, Proposer must delineate the responsibility of any and all subcontractor(s) to be utilized for this project.

4.8. Right to Refuse Personnel

The City reserves the right to refuse, at its sole discretion, any subcontractors or any personnel provided by the Prime Vendor/Contractor or its subcontractors for cause.

4.8.1. Joint Ventures and Partnering

4.8.1.1. Proposals from joint ventures or entities partnering for a specific service must be designed to minimize any administrative burden on the City as a result of the participation of multiple entities.

4.8.1.2. The Proposal shall clearly set forth the respective responsibilities and functions that each Principal of the joint venture or partnering entities would perform if awarded a contract pursuant to this RFP.

4.8.1.3. The Proposal must include a copy of the joint venture or partnering agreements that identify the Principals involved as well as their rights and responsibilities regarding a contract pursuant to this RFP.

4.8.1.4. The proposal transmittal letter must be signed by each Principal of the joint venture and include all required information.

4.9. Supplemental Terms and Conditions/Modifications

Supplemental terms and conditions and modifications will be made via the Contract document, which will be negotiated with the successful Proposer.

4.10. Standard Contract Information

A copy of the City's standard agreement that Proposer will be required to enter into is provided in Appendix A-1. This agreement is currently under review by the City Attorney and is subject to change.

4.10.1. Contract Approval

The RFP and the Proposer selection processes do not obligate the City and do not create rights, interests, or claims of entitlement in the apparent best-evaluated Proposer or any Vendor/contractor. Contract award and City obligations pursuant thereto shall commence only after the contract is signed by the successful Proposer and the City's designee and after the contract is signed by all other City officials as required by City ordinances and regulations to establish a legally binding contract.

4.10.2. Contract Payments

Contract payments shall be made in accordance with the Payment Terms and Conditions provision of the final contract. No payment shall be made until the contract is approved as required by City ordinances and regulations. Under no conditions shall the City be liable for payment of any type associated with the contract or responsible for any work done by the Proposer, even work done in good faith and even if the Proposer is orally directed to proceed with the delivery of services, if it occurs before the contract start date specified by the contract or before contract approval by City officials.

4.10.3. RFP and Proposal Incorporated Into Final Contract

This RFP and the successful proposal shall be incorporated into the final contract.

4.10.4. Contract Monitoring

The successful Proposer shall be responsible for the completion of all work set out in the contract. All work is subject to inspection, evaluation and acceptance by the City. The

City may employ all reasonable means to ensure that the work is progressing and being performed in compliance with the contract. At reasonable times, the City may inspect those areas of the Proposer's place of business that are related to the performance of the contract. If the City requires such an inspection, the Proposer shall provide reasonable access and assistance.

4.10.5. Contract Amendment

During the course of this contract, the City may request the Proposer to perform additional work for which the Proposer would be compensated. That work shall be within the general scope of this RFP. In such instances, the City shall provide the Proposer a written description of the additional work and the Proposer shall submit a time schedule for accomplishing the additional work and a price for the additional work based on the rates included in the Proposer's Response to this RFP. If the City and the Proposer reach an agreement regarding the work and associated compensation, said agreement shall become effective by means of a contract amendment. Any such amendment requiring additional work must be mutually agreed upon by the parties and signed by the Proposer and the City's designee and be approved by other City officials as required by City laws and regulations. The Proposer shall not commence additional work until the City has issued a written contract amendment and secured all required approvals.

4.10.5.1. The City reserves the right to make an award without further discussion of any proposal submitted.

4.10.5.2. City reserves the right to request a best and final offer.

4.10.5.3. The City reserves the right, at its sole discretion, to negotiate with the apparent best-evaluated Proposer subsequent to the award of contract.

4.10.5.4. The apparent best-evaluated Proposer shall be prepared to enter into a contract with the City. If a Proposer fails to sign and return the contract drawn pursuant to this RFP and final contract negotiations within 14 days of its delivery to the Proposer, the City may determine, at its sole discretion that the Proposer is non-responsive to the terms of this RFP and reject the proposal.

4.10.5.5. Contract award shall be subject to the contract approval of all appropriate City officials in accordance with applicable City laws and regulations.

5 SCOPE OF WORK

5.1 General

In response to the required functions and features stated in this RFP, the following project tasks are identified. The Vendor/Contractor shall describe the approach for each of these project tasks in accordance with the directives in the Task descriptions below.

5.2 Project Tasks

5.2.1 Task 1 - Project Management

The Vendor/Contractor shall designate a Project Manager for this project. The Project Manager shall be the single point of contact with the City and the System Engineer responsible for coordinating all efforts involved in this project. The Vendor/Contractor shall provide weekly status reports via e-mail to the City indicating a summary of progress and issues affecting schedule. An updated schedule shall accompany the status report. The Vendor/Contractor shall submit a quality control/quality assurance plan at the beginning of the project to outline the steps of quality to be followed during the project.

Deliverable: Weekly status reports including schedule (via e-mail) Quality control/quality assurance plan.

5.2.2 Task 2 - System Hardware Needs Identification

It is anticipated that the longest lead time item of the Project will be the system detection that must be present to adequately serve the advanced traffic management system (ATMS). Any such system detection additions, improvements, upgrades or modifications shall be furnished and installed by the Vendor/Contractor. The definition of the type and location of these system detectors must be accomplished by the Vendor/Contractor as the first task after the Notice to Proceed. Because the exact nature and placement of system detection is specific to the proposed system, the Vendor/Contractor must provide in the proposal submittal a detailed schematic of the system detector configuration needed for optimum operation of the proposed system. The Vendor/Contractor must prepare a technical memorandum within 14 calendar days following issuance of the Notice to Proceed. This technical memo shall provide detailed information as to every system detector's specific location, the technology recommended, the method or manner in which the system detector information is delivered to the controller, and identify existing detector locations which can be utilized. The memo shall also describe any necessary upgrades to the existing communications network required by the Proposer's system. The City will review and provide comments back to the Vendor/Contractor, and the Contractor must meet with City staff within one week following receipt of comments to reach a mutual agreement on the specific extent and nature of the system detection and communication system improvements.

Existing vehicle detectors include in-pavement loops and video detection. The City will consider other detection technologies if advantageous to successful system deployment.

There may be other field hardware upgrades or improvements that are integral to the successful operation of the adaptive system. These may include signal controllers, communication system elements (infrastructure and end equipment), etc. In general, the Vendor/Contractor shall furnish and install all additional field equipment upgrades necessary to successfully complete the deployment of the adaptive system. The Vendor/Contractor shall also specifically identify which existing equipment will remain to become integrated with the adaptive system.

Deliverable: Technical Memorandum of Equipment and Detection Locations and Upgrades.

5.2.3 Task 3 - Technical Plan

The Vendor/Contractor shall develop a technical plan that documents how the proposed system will be successfully deployed. This shall include the necessary steps for equipment approval, system installation and integration, testing requirements, and staff training. This shall also include a description of the specific existing equipment that is proposed to be upgraded and which existing equipment will remain operational. This plan shall be submitted to the City for approval within 15 calendar days after approval of the Task 1 Technical Memorandum.

Deliverable: Technical Plan.

5.2.4 Task 4 - Traffic Signal Hardware and Firmware Installation

The Vendor/Contractor shall furnish and install the traffic signal hardware and firmware needed to meet the Functional Requirements described in the RFP (Detailed checklist is provided in Section 12). If changes to the controller hardware and/or firmware are not needed, the Vendor/Contractor shall explicitly state this in the proposal. All required hardware and communication equipment shall be furnished and installed by the Vendor/Contractor. The Vendor/Contractor shall submit installation plans for approval for all new equipment proposed for this project. In addition, the Vendor/Contractor shall prepare and implement any changes to local signal operating parameters necessary for the adaptive system to function at the intersection level. All recommended spare components shall also be listed.

The Vendor/Contractor shall provide the necessary infrastructure for interagency communications between the City's traffic signal network and Caltrans' network. No additional conduit or interconnect cable are anticipated to be needed for this purpose. If the existing communications infrastructure cannot be used to interconnect the network for any reason, the project scope includes installation of wireless technology to connect the networks. A minimum of three wireless units and Yagi antennas will be needed for each corridor. Detailed system specifications are provided in Appendix B.

The Vendor/Contractor shall provide installation training to City staff. During installation by the Vendor/Contractor, the City may have a technician to assist with any immediate technical issues that may arise during installation. The Vendor/Contractor shall notify the City a minimum of 48 hours prior to installation. The Vendor/Contractor will then be responsible to

integrate the equipment within the system. The Vendor/Contractor shall implement, integrate, test, and warranty (up to 2 years) the equipment.

Deliverable: Installation of Hardware and Firmware and Training.

5.2.5 Task 5 - Advanced Traffic Management System (ATMS) Software, Firmware and Hardware Installation

The proposed ATMS software shall be commercial off-the-shelf software and already fully developed and fully operational, requiring minimal (if any) modifications to be tailored for this project with the exception of any modifications proposed by the Vendor/Contractor to satisfy the functional requirements. The ATMS software shall be written so as to operate on the "industry accepted" expandable, compatible, multi-tasking, and multi-user Microsoft Windows™ XP operating system.

The proposed ATMS shall be fully integrated with the proposed controller hardware, firmware, and adaptive module. The Vendor/Contractor shall provide a solution to meet this requirement.

Deliverable: Installation of ATMS Software.

5.2.6 Task 6 - Central Hardware

The Vendor/Contractor shall furnish and install a PC-based system with the ability to network multiple workstations. The proposal should initially include one server and two workstations located at the City of San Ramon Traffic Engineering offices and two laptops for field technicians. All furnished computer systems should be able to control the controllers and the ATMS. The Vendor/Contractor shall demonstrate this functionality as part of this project.

The Vendor/Contractor shall transfer the relevant portion of the existing traffic signal system database to the new ATMS database. The Vendor/Contractor shall also setup and configure all intersection graphics, system-wide graphics for the ATMS, populate signal timing database with existing timing parameters, and all other data necessary to provide a fully functional and operational traffic signal system.

The Vendor/Contractor shall coordinate with the City to insure that all new system hardware is compatible and operational with existing City computer network.

The Vendor/Contractor shall furnish a suitable firewall for the City to install. This firewall shall provide the necessary access and security for a remote user to the system.

The Vendor/Contractor will be responsible for installation and configuration of the advanced traffic management system software.
Deliverable: Furnish, install, configure, and test field and system functionality.

5.2.7 Task 7 - Acceptance Testing

The Vendor/Contractor shall be responsible for conducting all testing for the ATMS, the controllers, and any new communication infrastructure that is deployed under this project. The Vendor/Contractor shall prepare a test plan which shall describe the approach to conduct the testing including the test procedures for field equipment, workstations, and central system functionality. All acceptance test procedures shall be approved by the City at least 21 calendar days prior to the commencement of the acceptance testing.

Deliverable: Acceptance Test Plan Conduct and Document Testing

5.2.8 Task 8 - System Support - Warranty

The Vendor/Contractor shall fully warrant all materials, equipment, and service against poor and inferior quality or workmanship for a period of not less than ONE year from the date of final acceptance by the City. The Vendor/Contractor may need to obtain extended warranties for the hardware and software from the manufacturers to satisfy the City's warranty requirements. The Vendor/Contractor shall repair or replace any inoperable materials or equipment in a timely manner during warranty period to minimize the disruption of City operations.

The Vendor/Contractor shall provide all necessary on-site/off-site support as appropriate during the course of implementation. Following full completion and acceptance of the system, the Vendor/Contractor shall support the software (error corrections/updates) for a period of ONE year.

Deliverable: On and off-site support as necessary

5.2.9 Task 9 – Documentation/Training

The Vendor/Contractor shall provide the following system documents to support training and operation of the ATMS, controllers, communication infrastructure, and any other hardware/software deployed as part of this project:

- System operations/configuration manuals
- Users manuals
- Maintenance manuals
- Troubleshooting guides
- Diagrams and Schematics

The Vendor/Contractor shall provide training for the City staff on the operation, troubleshooting, maintenance, configuration, and installation of the hardware and software supplied. Training shall be conducted between the hours of 8:30 a.m. and 5:00 p.m., Monday through Friday. No training shall be conducted during the City's observed holidays.

This training shall consist of both formal classroom presentations and hands-on workshops to be conducted at the City facilities following successful completion of the Operational Test. The training shall include at least four separate four-hour sessions to be conducted within a 3-month period from the completion of the Operational Test. The Vendor/Contractor shall submit a minimum of 10 hard copy sets and one electronic copy of training manuals and handouts to the City for approval 14 days before the start of the training session. Final training manuals and materials (e.g., Powerpoint presentations) shall remain with the City of San Ramon following the training. Training shall also include any upgrades or Service Packs during the warranty period. At a minimum these training sessions shall include the following topics:

ATMS Training

- Use of operator interface
- Use of graphical map generation and animation
- Database use and manipulation
- Printing database
- System parameter and database entry
- Error messages and troubleshooting techniques
- Database custom report generation
- Overview of system structure and interfacing
- Priority Scheme setup
- Configuration setup
- File Maintenance
- Security and subscriptions
- System startup and shutdown
- System backup and recovery procedures

Controller Training

- Use of controller interface
- Controller configuration
- Controller database use and manipulation
- Controller parameter and database entry
- Error messages and troubleshooting techniques
- Alarms and paging
- Log report generation
- Overview of cabinet structure and interfacing
- Communications equipment interfacing

5.2.10 Task 10 – System Maintenance

The Vendor/Contractor shall provide a 15-year maintenance program as part of a maintenance agreement. The maintenance agreement should provide access to a troubleshooting hotline operated 24 hours a day, seven days a week including emergency maintenance, routine preventative maintenance, and system updates. The maintenance agreement shall be effective until the end of the 15-year maintenance program. The maintenance agreement shall have a provision that will require a qualified representative from the software and hardware manufacturer to respond to signal system emergencies within four hours of notification.

Signal system emergencies are defined as a condition related to the malfunctioning of the signal hardware or software that impedes normal operation of the signal timing plans, such as going into flash. The maintenance agreement should also address a policy on the cost of replacement parts. The proposals shall include full explicit pricing for this maintenance agreement. The cost to the City of the maintenance program shall be itemized on a year-by-year basis. The maintenance agreement shall provide warranty services and the fee is waived while the ATMS is under warranty. Following the Final Acceptance Testing and throughout the duration of three-year maintenance program period, the Vendor/Contractor shall have the ability to remotely log in to the City's system in order to provide troubleshooting assistance during system failures or malfunctions. Any costs associated with this requirement shall be clearly stated in the proposal.

5.3 System Upgrade and Custom Development
The Vendor/Contractor shall provide software upgrades to the City at no cost to the City for a minimum of 5 years. Software upgrades shall not require the system to be offline for longer than the time it may take to reboot the system. The Vendor/Contractor shall document all terms and conditions (including duration of free upgrades) in the proposal, as well as any upgrade costs after a certain period. The Vendor/Contractor shall indicate to what extent additional customization is available to the City. All additional costs associated with software customization shall be clearly defined in the proposal.

5.4 License Fees
The Vendor/Contractor shall indicate in the technical proposal how many licenses will be provided as part of the base system and whether the license agreement is site-based or seat-based. The Vendor/Contractor shall document in the technical proposal the cost of each subsequent license that is not provided as part of the initial system.

5.5 Project Schedule
The Vendor/Contractor shall propose a project schedule. It is anticipated that the project will be completed within a maximum of 70 working days from the date of the Notice to Proceed. The proposal shall outline the work plan, including a breakdown of work tasks, in accordance with this RFP.

5.6 Payment Schedule
The Vendor/Contractor shall propose a payment schedule which reflects completion of significant milestones. No payment will be provided for material on hand. A retention in an amount equal to ten percent (10%) of the total amount of the contract will be withheld until the date of final acceptance by the City.

5.7 Oral Interview/Demonstration
The City may, at its option, select the top three Proposers to attend an oral interview. The details of the interview, if necessary, will be distributed to the Proposers upon notification of an interview. The Proposer shall setup the software and hardware to replicate the proposed ATMS and field traffic control devices and allow the City to evaluate the features of the system. The Proposer shall describe any exceptions of the proposed system related to the System Specifications of this RFP.

6 EXISTING CONDITIONS

6.1 Existing Traffic Signal Network

The City of San Ramon currently operates and maintains 93 traffic signals through a closed loop signal system consisting of Type 170 controllers running Wapiti Microsystems W4IKS 170 controller firmware. All controllers are housed in Caltrans Type 332 cabinets. A vicinity map, project boundaries, and a map of the city's existing signal inventory is provided in Figures 1, 2, and 3, respectively, in Appendix E. Information regarding existing vehicle detection is also provided in Table I in the same Appendix.

The master controller firmware is version Wapiti Microsystems' W40SM. The network communications system consists of seven field master controllers that are accessed remotely by City staff through dial-up analog telephone modems.

6.1.2 Corridor Descriptions

6.1.2.1 Bollinger Canyon Road

Bollinger Canyon Road is currently a six to eight-lane arterial that connects the I-680 freeway with the new 11,000-unit residential community of Dougherty Valley, to the east of San Ramon, the newest annexation. This arterial serves considerable regional traffic and carries in excess of 63,000 vehicles per day near the freeway. It bisects the future City Center development which includes a mix of retail, office, and residential uses. It currently experiences considerable congestion during AM and PM peak periods.

6.1.2.2 Crow Canyon Road

Crow Canyon Road is currently a six to eight-lane arterial that connects the I-680 freeway with the Danville/Blackhawk area to the northeast of San Ramon, and also serves unincorporated portions of Contra Costa County. Crow Canyon Road carries the greatest percentage of regional traffic, and currently carries in excess of 61,000 vehicles per day near the freeway. It bisects the future City Center development which includes a mix of retail, office, and residential uses. It currently experiences considerable congestion during AM and PM peak periods.

6.1.3 Project Locations/Limits

Figure I depicts the project intersections in the shaded areas. The project limits are Tahiti Drive and Twin Creeks Drive on Crow Canyon Road, and Alcosta Boulevard and San Ramon Valley Boulevard on Bollinger Canyon Road.

7 SYSTEM SPECIFICATIONS

7.1 Advanced Traffic Management System Software

The advanced traffic management system software shall include all of the following functional requirements that are required to operate an ATMS. The functional requirements are presented in four categories: traffic management functions, system integration, user interface, and maintenance and support. The vendor/contractors shall state whether they comply with the functional requirements by completing the enclosed ATMS Functional Requirement List in Chapter 13. Clarification should be provided if the response is "No" or the vendor/contractor wishes to clarify a "Yes" with modifications to the system software. Cost proposals should be provided for those functional requirements that require customization to a vendor/contractor's system software.

7.1.1 Traffic Management Functions

7.1.1.1 Status Monitoring

The advanced traffic management system software shall monitor the local field devices on a second-by-second basis, or at a user defined rate if polling rates are restricted by elements of the field communications infrastructure. The advanced traffic management system software shall simultaneously process both incoming data and operator requests.

7.1.1.2 Control Section

The advanced traffic management system software shall enable the operator to define control sections, or subsystems or subgroups, each of which shall be completely independent of the connection of any particular intersection to the communications network. The number of intersections in a particular subsystem shall be programmable from a minimum of one to a maximum of the total number of intersections in the system.

7.1.1.3 Operation Mode

The advanced traffic management system software shall operate in a centralized distributed mode, making use of the intelligence in the local traffic controllers. The advanced traffic management system software shall be designed for unattended operation twenty-four (24) hours per day, seven (7) days a week, without requiring an operator to be logged into the system. The advanced traffic management system software shall provide system control by coordinating intersection operation on an individual, section, subgroup, or system-wide basis. The system should support multiple operator selectable control modes including free, manual, time-of-day, and adaptive operation.

7.1.1.4 Traffic Database

The advanced traffic management system software shall provide the capability of having multiple users and multiple workstations working simultaneously on a common, centralized Microsoft Structured Query Language (SQL) database that is suitable for online and off-line database generation and maintenance. Any database changes shall be achievable without having to restart the advanced traffic management system software. All tables in the database shall be printable in the same form as shown on the computer screen for use by the traffic engineers and maintenance technicians in the field. In order

to alleviate repetitive data entry, the advanced traffic management system software shall allow the operator to copy and paste data tables for use with other Windows based applications. The operator shall be able to edit and view the same entry across multiple devices. The operator shall be able to copy the database fields from one controller to another controller. The data entry interface shall include automated safeguards such as range check, to preclude dangerous or undesirable intersection operation. The system shall provide a database comparing function and show only the differences between selected device database.

7.1.1.5 Database Backup
All the database backup and recovery should be through the City's existing backup system.

7.1.1.6 Database Report
The advanced traffic management system software shall allow users to generate reports from a library of pre-formatted and customizable report templates from the database. The operator shall be able to print complete or selectable controller database information. The database information shall be easily exported to other windows applications.

7.1.1.7 Upload/Download
The advanced traffic management system software shall be capable of an instant full or partial (e.g., screen, page, or category) upload/download on a system-wide, section, group or intersection basis. The upload/download procedure shall not cause any field devices to operate off-line or into an abnormal operation mode (e.g., flash operation for traffic controllers). The advanced traffic management system software shall highlight errors or missing data in timing plans prior to permitting download of the timing plans to a controller. The advanced traffic management system software shall generate a comparison report listing all data discrepancies between the database and controller. The advanced traffic management system software shall write this report to a text file for printing or editing.

7.1.1.8 Failure Monitoring
The advanced traffic management system and field devices shall constantly monitor the system to diagnose and report on component failures. Upon failure, the advanced traffic management system software shall treat the failure as an event alarm and record it in an event log. When the failed component becomes operational again, an event alarm shall also be recorded in the event log.

7.1.1.9 Scheduler
The advanced traffic management system shall provide an automated system administration that performs pre-programmed, automated tasks such as full controller status, data collection, time synchronization, database verifications, etc. The collected information shall be stored on the server and be available for retrieval all the time. The users shall be able to perform all the pre-programmed tasks manually without interference with the scheduled tasks.

7.1.1.10 Timing Plan
The number of timing plans, timing plan pages, and coordination plan pages that can be stored by the advanced traffic management system software at each intersection shall be compatible with those limitations of the traffic controllers.

7.1.1.11 Congestion Level
The advanced traffic management system software shall provide a congestion level system that enables the user to define and edit intersections' and roadway segments' congestion levels to be displayed on the GIS map and to generate alarms for these conditions. Congestion level calculations shall be provided based on volume counts and occupancy ratios, and other user defined algorithms.

7.1.1.12 Event Alarm
The alarms shall be recorded in an event log and be displayed with a time, date, intersection name, alarm type, and alarm state. The system shall provide a view of the most recent alarms during the logged-in session and a brief historical list of the 100 most recent system alarms. The operator shall be capable of customizing all alarm descriptions and printing the event alarms. The system shall be capable of forwarding all the alarms to agency personnel via paging, text messaging, or e-mail alerting system.

7.1.1.13 Split Monitor
The split monitors shall track split information for the current cycle as well as historical cycles during the same active pattern. Split time information for selected intersections shall be both graphically (in color coded format) and numerically (time in seconds) provided in real time.

7.1.1.14 Detector Data Processing
The advanced traffic management system software shall be capable of processing the detector data and generating turning movement counts with lane assignments, phases, and vehicle detectors.

7.1.2 System Integration

7.1.2.1 Time Synchronization
The advanced traffic management system software's time clock should be automatically synchronized with universal time through the WWV radio broadcast, WWV Internet source, or GPS clock. Such automatic synchronization shall occur at least once per day. The advanced traffic management system software shall be capable of manually and systematically (pre-scheduled) synchronizing all field devices with the system software's time clock.

7.1.2.2 Operating System
The advanced traffic management system software shall operate on the City's Local Area Network (LAN) configuration, with a minimum of one server computer, and a minimum of 2 client workstations. The servers shall provide a web-based data transaction with the Client workstations, without the need for mapped network drives, or shared folders. The client software shall run on personal computers with Windows XP Professional

Operating Systems. The server software shall run on Windows Server 2003 and utilize Microsoft SQL Server 2005 or newer version of the operating system and software.

7.1.2.3 Communications Protocol
The advanced traffic management system software shall support the City's existing twisted pair copper interconnect network with dial-up modem, DSL, and Ethernet-based data communications. Communications protocols should comply with current NTCIP and AB3418 standards. Devices requiring different transmission speeds and communication protocols should coexist on the same communication channel.

7.1.2.4 Security
The advanced traffic management system software shall provide and maintain a security system to prevent unauthorized access to the system from inside (e.g., traffic console and other office computers) and outside (e.g., intersections and internet) of the City. Operator privileges shall be definable on a functional level such as view only, upload only, download only, and full access. Each operator shall have a privilege level mask defined by the system administrator. The system administrator level shall have full access to the system as well as the responsibility for maintaining account passwords and privilege level masks. Each operator shall have a unique, operator-definable password used to gain access to the system. When the operator signs off of any individual workstation, all windows and applications that are part of the ATMS system software shall be closed automatically.

7.1.2.5 Internet Access
The advanced traffic management system should employ web-based mapping platform such as Microsoft Virtual Earth to provide real-time internet access.

7.1.2.7 Interface with City's GIS System
The advanced traffic management system should be capable of exchanging files with the latest version of Autodesk MGE Geographic Information Systems (GIS).

7.1.2.9 Integration of City's Communications System
The advanced traffic management system shall utilize the City's existing communications infrastructure consisting of copper twisted pair interconnect cable. The system shall utilize Ethernet-over-copper access devices such as Actelis series ML 600 or equal to deliver highest possible capacity and maximum possible speed available over existing copper twisted pair network.

7.1.2.9 Coordination with Caltrans Ramp Signals
The ability to communicate and coordinate signals with the freeway ramp signals in both corridors is an extremely desirable function of the ATMS. Existing interconnect conduit and conductors are believed to be available for connection to the existing City master controller cabinets at the intersections of Crow Canyon Road/San Ramon Valley Boulevard and Bollinger Canyon Road/Camino Ramon. However, the City's grant funding includes funds for installing a wireless interconnect system to provide interagency traffic signal system communications. If wireless communication is necessary, line of sight constraints are expected to result in the need for a third

intermediate unit to relay radio signals between the two networks. Three receiver/transmitter units with antennas would be needed for each corridor.

7.1.3 User Interface

7.1.3.1 Ease of Use

All workstation user interface functions shall be implemented using Microsoft Windows-based graphical user interface ("GUI") concepts, conforming to Microsoft Windows Standards. The GUI shall be easy to use while providing a fast and efficient way to control and monitor the traffic signal system in real-time from a single point. All operator actions shall be immediately visible as graphical status changes on screen display windows. All status or programmed changes to the system shall be immediately visible to all other users logged on the system, without a manual refresh or re-logging into the system. The GUI shall allow for navigation between all system functions from within a single visual windowing framework. All functions will be accessible through tab-style menu navigation, with the principle screen area used for the current task.

The user interface shall also allow for real-time incoming alarms to be visible at all times, regardless of the application context.

7.1.3.2 Custom View

The GUI shall provide interactive viewing filters to enable each system user to customize the viewing screens, amount, and type of dynamically displayed data. The advanced traffic management system shall present each user such specific, customized views upon subsequent login sessions.

7.1.3.3 Dynamic Display

The advanced traffic management system should provide a real-time GIS-based status map displaying all the system elements with full zooming/panning and layer setup capabilities. Graphical icons should be used on the graphical displays as layers to represent system devices. The icons should maintain precise coordinates and proportional mapping sizes and scales as the GIS aerial maps are reduced or enlarged. The icons should provide easy access to traffic control data and timing, real-time signal status, Level-of-Service information, CCTV Cameras, Network Switches, and generic device controls.

7.1.3.4 Map Editing

The advanced traffic management system should provide a GIS shape file editing utility for adding or moving system devices (e.g., controllers, network switches, cameras, and sensors) and events (e.g., roadway congestion levels, construction and special activities, and detour routes) on the GIS map. The system should be capable of importing complete MGE-compatible GIS shape files into the GIS mapping system. The system should be able to store and display documents such as PDF files, AutoCAD drawings, and text documents by devices.

7.1.3.5 History Report
The advanced traffic management system software shall generate user selectable formatted reports for traffic events, detector data, measures of effectiveness, and/or communications statistics. The reports shall be generated on a system-wide, section or intersection basis.

7.1.3.6 Global Parameter Change
Global changes to parameters of field devices are desirable to be made on a system-wide, section, or intersection basis without requiring the operator to enter data one intersection at a time.

7.1.3.7 Help Menu
The software shall offer a built-in, on-screen help menu to assist the operator in using the software without requiring the use of hard copy documentation.

7.1.4 Maintenance and Support

7.1.4.1 Expandability
The system shall enable expansion, without redesign of any of the system components. Expansion shall require only the addition of hardware components, software replication, and expanded database creation. The City shall be able to input additional field devices (geometry and configuration) or edit existing field device data without requiring assistance from the vendor.

7.1.4.2 Industry Standard
The Vendor/Contractor shall keep the system up to the most current industry standards when a new standard is adopted or existing standards are amended.

7.1.4.3 Documentation
The delivered advanced traffic management system software shall be fully documented. This documentation shall consist of pertinent technical documentation and user documentation. The documentation shall include:

- System architecture and block diagram
- Hardware requirements
- Database definitions and file structures
- Interface specifications
- Specifications compliance matrix
- Communication protocols including field device protocol
- Security documentation
- System backup and recovery procedures
- System operational procedures and error handling
- Operational options
- 6 hardcopies and one electronic copy of the ATMS manuals
- Online user's manual or help facility

All documentation shall, at a minimum, be submitted in hard copy. All documentation shall be submitted to the City for final approval.

7.1.4.4 Recovery
The advanced traffic management system software shall automatically recover from a power failure. The advanced traffic management system software shall automatically begin communications with all field equipment via the central communications system.

7.1.4.5 Technical Support
It is desirable for the vendor to offer online help for controller and software. The vendor shall document in the proposal what type of online support is available and any associated costs.

7.2 Hardware Specifications
The ATMS hardware equipment shall meet the minimum requirements shown on the checklist in Section 13. All traffic signal equipment used for the project shall conform to Standard City Specifications shown in Appendix B. Any equipment needed for which no specifications exist in Appendix B, shall conform to Caltrans specifications.

7.2.1.4 Computer Equipment
Minimum City specifications for the ATMS server, workstations, and laptops are provided in Appendix D.

7.2.2 Traffic Controller
The Vendor/Contractor shall supply traffic controllers as needed to operate the ATMS. The traffic controllers shall be Type 170 or 2070.

8 REQUIRED PROPOSAL SUBMITTALS AND SIGNATURE PAGE

This page and Sections 9 – 12 shall be required to be submitted as part of the Vendor/Contractor's proposal package. All forms are required to be neatly and completely filled out. Blank responses will not be accepted and are grounds for rejection of Vendor/Contractor's proposal.

DESIGNATED CONTACT: Proposer is required to indicate in the space provided below, the designated contact individual's name, address, phone number(s) and email address.
For information concerning RFP procedures and regulations (i.e., submission deadline, forms required, etc.) interested parties may contact:

Mike Talley, Project Manager
City of San Ramon
Engineering Department
3180 Crow Canyon Pl., Ste. 140
San Ramon, CA 94583
Tel: (925) 973-2654
Fax: (925) 866-6173
E-mail: mtalley@sanramon.ca.gov

VENDOR/CONTRACTOR

Company Name:_____

Authorized Signature: _____

Name and Title: _____

Date: _____

9 SUBCONTRACTOR LIST

ALL PROPOSERS MUST SUBMIT LIST OF PROPOSED SUBCONTRACTORS WITH PROPOSAL. The list must include the name, business addresses, and portion of work (description of work to be done) for each subcontractor that will be used in the work if the proposer is awarded the contract. No subcontractor doing work in excess of 0.5 percent of the total amount of the bid who is not listed shall be used without the written approval of the City. (Additional supporting data may be attached to this page.) For the Proposal opening, this information may be provided in handwritten form. Within two business days of the opening of Proposals, Proposer shall provide typewritten list of subcontractors to Mike Talley, Project Manager, Engineering Services, 3180 Crow Canyon Place, Suite #140, San Ramon, CA 94583 Tel: (925) 973-2654.

NAME	BUSINESS ADDRESS & PHONE NO.	DESCRIPTION OF WORK
1.		
2.		
3.		
4.		

10 SIMILAR PROJECT LIST

Not less than three similar projects should be listed.

Project No. 1

Project Name:	
Project 1 Description:	
Owner:	
Contract Amount:	
Actual Completion Time:	
Brief Summary of Results Achieved:	
Owner's Representative:	
Owner's Telephone No. & Email Address	

Project No. 2

Project Name:	
Project Description:	
Owner:	
Contract Amount:	
Actual Completion Time:	
Brief Summary of Results Achieved:	
Owner's Representative:	
Owner's Telephone No. & Email Address:	

Project No. 3

Project Name:	
Project 1 Description:	
Owner:	
Contract Amount:	
Actual Completion Time:	
Brief Summary of Results Achieved:	
Owner's Representative:	
Owner's Telephone No. & Email Address	

Project No. 4 (Optional)

Project Name:	
Project Description:	
Owner:	
Contract Amount:	
Actual Completion Time:	
Brief Summary of Results Achieved:	
Owner's Representative:	
Owner's Telephone No. & Email Address:	

11 COST PROPOSAL

See next page for Cost Proposal form. Proposer shall provide costs for both the Base Bid schedule and Bid Alternative A based on projected system requirements. The City may choose to award the Base Bid amount only, or the Base Bid amount with Bid Alternative A depending on budget constraints.

COST PROPOSAL

Traffic Signal Management System Upgrade: Bollinger Canyon Road and Crow Canyon Road (CIP 5457)

Item No.	Base Bid Items	Unit	Qty.	Bid Price	Total Bid
1	System Design	LS	1		
2	Furnish & Install ATMS Software Including License Fee (15-Year License)	LS	1		
3	15-Year System Support/Maintenance	LS	1		
4	Local Controller upgrade to Traffic Adaptive	EA	16		
5	Master Controller upgrade to Traffic Adaptive	EA	2		
6	Comm. Conversion: Master to Traffic Mgmt. Ctr. link – Ethernet over Copper	EA	2		
7	Communications Conversion: Master to Local link – Ethernet over Copper	EA	14		
8	Furnish & Install Traffic Adaptive Server	EA	1		
9	System Integration and Configuration	LS	1		
10	Warranty	LS	1		
11	Training	LS	1		
12	Spare Equipment / Test Equipment	LS	1		
	TOTAL BASE BID				

Alternative "A" Bid Items

Item No.	Alternative "A" Bid Items	Unit	Qty.	Bid Price	Total Bid
1	Vehicle Detection Upgrade: Type E Inductive Detector Loops	LS	1		
2	Vehicle Detection Upgrade: Furnish and Install Controller Hardware and Cables for Video Detection System	LS	1		
3	Vehicle Detection Upgrade: Furnish and Install Video Cameras	LS	1		
4	Furnish & Install Wireless Communications System to Interconnect City Traffic Signal Network with Caltrans Controllers	EA	2		
5	Furnish & Install Operator Workstation	EA	2		
6	Furnish & Install Operator Laptop Computer	EA	2		
	TOTAL BID: ALTERNATIVE A				

12 ATMS FUNCTIONAL REQUIREMENTS

FUNCTION	PRIORITY			
	Req'd.	Desired	Compliance Y/N/Partial	Comments
GENERAL SYSTEM REQUIREMENTS				
Adaptive Traffic Control	✓			
Ability to Coordinate with External Network (eg., Caltrans)		✓		
NTCIP Compliant		✓		
Expandable to 50 signals	✓			
Multi-terminal, multi-user interface	✓			
Prevention of unauthorized access	✓			
Definable operator privileges		✓		
Remote PC access and control (identical to central workstation)	✓			
Local intersection control via laptop at controller		✓		
User-selectable automatic paging capability for alarms		✓		
WWV or server clock time sync to controllers	✓			
Automatic time drift notification		✓		
Modes of operation – Adaptive, TOD/DOW, manual, free		✓		
One-second frequency of communication to intersection controller for status check		✓		
24/7 operation without operator log-in	✓			
User-selectable intersection, group, or system-wide control	✓			
Event failure logging and visual notification	✓			
Ability to schedule events with reporting		✓		
Minimum of 8 programmable special functions	✓			
Graphical preemption monitoring		✓		
Ethernet over copper communications (IP-based)	✓			
Network access limited to Engineering staff		✓		
Continuous system operation during maintenance	✓			
System failure notification	✓			
VEHICLE DETECTION REQUIREMENTS				
Real-time volume, speed, classification, and occupancy available from system detectors	✓			
System includes intersection detection and midblock vehicle detection		✓		
Detector data automatically recorded in system database in 5-minute increments with date and time stamp	✓			
Daily archiving to CD		✓		
Second-by-second vehicle detection monitoring		✓		
User-definable detector thresholds including maximum presence, no activity, erratic output, failed comm., watchdog fault, open loop fault, shorted loop fault, excessive change fault		✓		

FUNCTION	PRIORITY			
	Req'd.	Desired	Compliance Y/N/Partial	Comments
DATABASE REQUIREMENTS				
Ability to archive up to 4 weeks of all data	✓			
Bad data due to equipment or comm. failure is identified	✓			
Automatic archive to CD		✓		
Online and offline database management	✓			
Database includes timing plans in City format, timing schedules, operator databases, alarm databases, channel assignments, communication parameters	✓			
Off-the-shelf database package	✓			
Database error checking including range-checking, timing plan verification, and conflicting phases	✓			
Automatic remote computer update	✓			
Automatic database back-up	✓			
Custom database reporting	✓			
LOCAL CONTROLLER REQUIREMENTS				
Minimum of 4 local cabinet alarms	✓			
Local/Master parameter comparison	✓			
Establish offsets centrally and locally		✓		
REPORTING REQUIREMENTS				
Graphical reporting interface	✓			
Formatable reports	✓			
Intersection, group, or system-wide reporting	✓			
Minimum system status reporting includes controllers, vehicle detection, and communication channels	✓			
Minimum communication status reporting includes number of communication attempts, number of successes/ failures, percent successful communications per intersection, channel, comm. type, and system	✓			
Minimum intersection status reporting includes real-time information such as location, comm. status, mode, phase and timing information, current split, detection status, call status, and next phase	✓			
Intersection failure logging	✓			
Detector failure logging	✓			
Communications channel failure logging	✓			
System logging includes operational events, traffic device failures/repairs, communication failures/repairs, traffic data transfer messages, manual override changes, operator log-on/log-off	✓			
Archive logging capability	✓			

FUNCTION	PRIORITY			
	Req'd.	Desired	Compliance Y/N/Partial	Comments
GRAPHICAL INTERFACE REQUIREMENTS				
All adaptive functionality is through graphical interface		✓		
Customizable dynamic and static informational layers at different scales		✓		
Zoom capabilities with drag-window feature	✓			
Ability to pan map view	✓			
Point-and-click manipulation with mouse to select elements	✓			
User-definable hot keys		✓		
Ability to display unlimited multiple interactive pop-up windows/objects		✓		
User-configurable window size	✓			
Menu driven graphics	✓			
Visual and audio alarm notification	✓			
Identification of status changes	✓			
Windows XP Compatible	✓			
Displays system-wide status		✓		
Displays subsystem operations		✓		
Displays intersection operations	✓			
Displays on-screen reports	✓			
Ability to import TIFF files		✓		
Ability to import/export DGN or DWG files		✓		
Ability for City staff to modify graphics		✓		
Automatic graphical and database update to all licenses	✓			
Instantaneous redraw of static graphics		✓		
Second-by-second update of real-time data		✓		
Double-click functionality		✓		
Intersection information displays, at a minimum, street name, legend, current timing plan, signal display, comm. status, control mode, vehicle calls, ped calls, detector actuation, special functions, timing plan parameters, MOEs, equipment failure status, and real-time cycle clock	✓			
User-friendly help	✓			
Dynamic time-space diagrams generation		✓		
Capability for user to input additional intersections	✓			
Upload/download capability	✓			
ADDITIONAL REQUIREMENTS				
System Test Plan	✓			
Acceptance Test Procedures	✓			
30-day system test	✓			
Warranty for 1 year including support services and automatic updates	✓			
Software Licenses for central server and 16 intersections	✓			
Documentation – O&M, Network, Diagnostics, Traceability,	✓			